NEW ELEMENTS AND EPHEMERIS OF COMET *e*, 1896, (GIACOBINI).

By F. H. Seares.

From the Lick Obervatory observations of September 5th, 11th, and 28th, Mr. Crawford and I have deduced improved elements of Comet Giacobini. The elements are considerably different from our first set, and show how very nearly indeterminate a first solution would necessarily be.

Our results are:

$$T = \text{Oct. } 18.91806 \text{ G. M. T.}$$

$$\left.\begin{aligned} i &= 12^\circ\ 20'\ 0''.0 \\ \Omega &= 186\ 15\ 44\ .0 \\ \omega &= 136\ 10\ 6\ .1 \end{aligned}\right\} \text{Mean equinox of 1896.0.}$$

$$\log q = 0.208244$$

Residuals for the middle place (O — C):

$$\Delta\lambda \cos\beta = -5''.9;\quad \Delta\beta = -20''.6.$$

[The ephemeris, at four-day intervals, from October 14th to the 26th, is here omitted.]

Students' Observatory, Berkeley, Cal., October 9, 1896.

ELLIPTIC ELEMENTS OF COMET *GIACOBINI.*

By W. J. Hussey and C. D. Perrine.

From Mt. Hamilton observations of September 5th, 11th, and 28th, we have computed the following elliptic elements of this comet:

Epoch: 1896, Sept. 5.5, Gr. M. T.

$$\left.\begin{aligned} M &= 354^\circ\ 43'\ 37'' \\ \Omega &= 191\ 44\ 13 \\ \omega &= 139\ 5\ 28 \\ i &= 11\ 35\ 18 \end{aligned}\right\} \text{Mean ecliptic and equinox of 1896.0.}$$

$$\log e = 9.82189$$

$$\log a = 0.64636$$

$$\log \mu = 2.58047$$

$$\text{Period} = 9.323 \text{ years.}$$